Class 10 Maths – Polynomials – Topic: Zeros of Polynomial & Relationship between Coefficients and Zeros (Topic Test)

ALPHA CLASSES DEOBAND | Session 2026–27 | CBSE Board Pattern

Name: _____ **Roll No.:** _____ **Date:** _____

Time: 45 minutes | **Maximum Marks:** 25

General Instructions: - All questions are compulsory. - Show all working steps clearly. - Use the coefficient relations (sum = $-b/a$, product = c/a) where applicable.

Section A – Very Short Answer (1 mark each)

Q1. What is the degree of the polynomial $5x^4 - 3x^2 + 7$? [1 mark]

Q2. If $p(x) = x^2 - 4x + 3$, find $p(1)$. Is 1 a zero of this polynomial? [1 mark]

Q3. Write the sum of zeroes of $x^2 + 8x + 15$. [1 mark]

Q4. What is the product of zeroes of $3x^2 - 5x + 2$? [1 mark]

Section B – Short Answer Type (2 marks each)

Q5. Check whether $x = -3$ is a zero of $p(x) = x^2 + x - 6$. Show the substitution steps. [2 marks]

Q6. Find the sum and product of zeroes of $5x^2 + 2x - 3$. [2 marks]

Q7. Form a quadratic polynomial whose zeroes are -4 and 7. [2 marks]

Q8. A student claims that $\frac{1}{x} + x - 5$ is a polynomial of degree 1. Is this correct? Give a reason for your answer. [2 marks]

Section C – Short Answer Type II (3 marks each)

Q9. The zeroes of $p(x) = 3x^2 + 2x - 1$ are $\frac{1}{3}$ and -1. Verify both the sum and product relations between the zeroes and the coefficients. [3 marks]

Q10. Form a quadratic polynomial whose sum of zeroes is -2 and product of zeroes is -8. Then verify that the sum and product of zeroes of your polynomial match the given values. [3 marks]

Q11. For the polynomial $p(x) = x^2 - (k+6)x + 2(2k-1)$, find the value of k if the sum of zeroes is half of the product of zeroes. [3 marks]

Section D – Long Answer / HOTS (4 marks)

Q12. A student is given two zeroes: $\frac{5}{2}$ and $\frac{-3}{2}$.

a. Form a quadratic polynomial with integer coefficients having these zeroes. [1 mark]

b. Find the sum and product of zeroes from your polynomial using the coefficient relations. [1 mark]

c. Verify both zeroes by substituting them into the polynomial you formed. [2 marks]

All the best!

Prepared for ALPHA CLASSES – Class 10 Maths (CBSE) – Chapter: Polynomials, Topic: Zeros of Polynomial & Relationship between Coefficients and Zeros